

RIVERS AND FLOODS

By R. E. SPENCER

A flood of minor importance occurred during the second week of February in the Wabash and White Rivers of Indiana with resultant losses amounting to \$4,450 in suspension of business, and \$5,000 in prospective crops. A saving estimated at \$10,000 was effected through Weather Bureau warnings.

Aside from the Wabash flood and the prevention of levee repairs by continued high water in the Illinois River, the floods of February were practically without consequence.

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
Cape Fear: Elizabethtown, N. C.....	Feet 22	25	25	22.6	25
Peedee: Mars Bluff, S. C.....	17	25	29	18.4	27
Black: Kingstree, S. C.....	12	27	28	12.0	27-28
Santee:					
Rimini, S. C.....	12	23	(1)	15.2	27
Ferguson, S. C.....	12	24	(1)	13.6	28-29
Altamaha: Charlotte, Ga.....	15	25	(1)	16.0	27
MISSISSIPPI DRAINAGE					
Shanango: Sharon, Pa.....	9	9	10	10.2	9
Tuscarawas: Gnadenhutten, Ohio.....	9	9	10	9.8	10
		15	18	11.6	17
Walhonding: Walhonding, Ohio.....	8	15	16	9.0	15
Wabash:					
Lafayette, Ind.....	11	6	7	11.9	6
		15	18	15.4	16
Covington, Ind.....	16	16	19	19.5	18
Vincennes, Ind.....	14	9	13	14.8	11
Mount Carmel, Ill.....	16	8	22	20.7	13
Tippecanoe: Norway, Ind.....	6	5	10	6.4	8-9
		14	19	6.5	17-18
		23	23	6.0	23
White: Decker, Ind.....	18	10	15	21.9	13
White, East Fork: Seymour, Ind.....	10	6	6	10.5	6
		8	8	10.0	8
White, West Fork:					
Elliston, Ind.....	19	6	9	22.3	8
Edwardsport, Ind.....	15	6	12	18.1	9
		17	19	15.6	18
Illinois:					
Peru, Ill.....	14	(1)	(1)	20.0	Dec. 18-19
Henry, Ill.....	10	(1)	2	14.4	Dec. 17-18
		9	25	10.8	Feb. 17-19
Havana, Ill.....	14	(1)	(1)	18.1	Dec. 19
Beardstown, Ill.....	14	(1)	(1)	19.3	Dec. 16-18
Pearl, Ill.....	12	7	26	13.7	Feb. 16-17
Grand: Chillicothe, Mo.....	18	8	9	18.7	Feb. 8
Black: Corning, Ark.....	11	9	13	11.3	Feb. 10-11
		20	21	11.0	Feb. 20-21
		25	(1)	11.7	Feb. 27-28
WEST GULF DRAINAGE					
Trinity:					
Dallas, Tex.....	25	23	23	28.0	23
Trinidad, Tex.....	23	28	(1)	33.8	27
Guadalupe: Victoria, Tex.....	16	26	26	16.4	26

1 Continued at end of month.

2 Continued from last month.

MEAN LAKE LEVELS DURING FEBRUARY, 1928

By UNITED STATES LAKE SURVEY

[Detroit, Mich., March 3, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during February, 1928:				
Above mean sea level at New York	Feet 601.88	Feet 578.78	Feet 571.73	Feet 245.99
Above or below—				
Mean stage of January, 1928	-.30	+.06	+.06	-.05
Mean stage of February, 1927	+.55	+.52	+.74	+.68
Average stage for February last 10 years	+.48	-.41	+.61	+.97
Highest recorded February stage	-.60	-3.94	-2.02	-1.68
Lowest recorded February stage	+1.64	+1.36	+1.83	+2.16
Average departure (since 1860) of the February level from the January level	-.20	+.04	-.09	+.07

¹ Lake St. Clair's level: In February, 1928, 573.55 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, FEBRUARY, 1928

By J. B. KINCER

General summary.—Rather widespread rains during the first decade over the Southwest and extending northeastward over the Great Plains and upper Mississippi Valley were very beneficial in relieving droughty conditions, and the additional moisture during the second decade was especially favorable over the area from western Nebraska and eastern Colorado southward. In many other portions of the South good showers occurred, although some Florida uplands continued too dry. The weather was especially favorable in the western Cotton Belt as well as in the Southeast, where truck and other crops were benefited.

During the second decade rather frequent rains in the South Atlantic and East Gulf States from Virginia to the Mississippi River were unfavorable for field operations, while low temperatures retarded growth and did more or less damage to winter truck in southeastern sections. Newly planted crops, particularly potatoes, were unfavorably affected as to germination, while potato tops were frozen in the important producing section of Hastings, Fla. In the Southern States west of the Mississippi River better weather prevailed, with no harmfully low temperatures, and the mostly fair weather permitted much field operations.

During the last decade the widespread, unseasonably cold weather, with considerable precipitation, over the eastern half of the country was generally unfavorable for growth of winter crops and truck in the more southern States, but the low temperatures were favorable in retarding unseasonable advance of fruit buds. Trees were still largely dormant, in marked contrast to last year. Farm work in the South made poor progress and further cold and the absence of snow were again rather unfavorable in the interior and Middle Atlantic States; seasonal farm work made little progress. Conditions were generally favorable in many of the Western States during most of the month, except that toward its close there was some suffering of livestock reported from the northern Rocky Mountain area and rain was needed in much of California.

Small grains.—Winter wheat was favored by the widespread moisture during the first decade in the theretofore droughty areas, especially in the central and west-central Great Plains. In the Ohio Valley, however, conditions were less favorable, with the ground mostly bare of snow and many reports of apparent damage to wheat by heaving. Further complaints were also noted in parts of the middle Atlantic area, particularly in Pennsylvania, but in the more Western and Northwestern States conditions were generally favorable. A rather extensive snowstorm the latter part of the second decade gave wheat fields a fair covering and protection in the northeastern Ohio Valley, parts of the Middle Atlantic States and the Lake region, but in other portions of the Wheat Belt fields continued mostly bare. There was distinct improvement in Kansas, western Oklahoma, and in Texas, although growth was slow in the latter State because of cold.

During the last decade only a few localities in the northern Ohio Valley were afforded protection during the cold weather, and this made a continuation of rather unfavorable conditions for wheat in the eastern half of the belt, with further reports of injury. In most of the western belt conditions remained mostly favorable, though growth was slow in southern districts because of cold weather. In the far Northwest favorable condi-

tions continued, except for some thawing and freezing, but more moisture was needed in California, parts of the far Southwest, and some Rocky Mountain districts.

Miscellaneous.—Pastures continued mostly in poor condition in the Southeast during the first decade and reports of rather extensive injury to grass and clover were noted from many central sections. The mild weather during this period permitted free ranging of livestock in the northern Great Plains and the range was mostly open in Wyoming. Moisture was insufficient in parts of the central Rocky Mountain region and additional precipitation was needed in some other western areas. Livestock continued to do well generally. During the second decade conditions remained practically unchanged in the Southeast and central sections, but general snow in New Mexico was of benefit. Lambing was progressing satisfactorily in Wyoming, with shearing begun in Arizona. Continued freezing and thawing caused some injury in central sections during the last

decade, but there was slight improvement in the Southeast and reports were mostly favorable in the great western grazing districts.

Continued dry weather was unfavorable for recovery of damaged truck in Florida during the first part of the month, but planting and replanting were active. Truck crops continued poor during the second decade with rainfall needed on Florida uplands, while frost and freezing weather on the 19th and 20th in the northern part of this State cut potatoes to the ground in the Hastings district and damaged truck and melons elsewhere. Winter and spring truck crops made mostly slow growth in the Southern States during the last part of the month, though showers were beneficial locally. The cool weather most of the month was favorable in retarding the unseasonable advance of fruit buds, and trees were largely dormant at the close. Citrus bloom escaped serious injury by the cold weather in Florida and much bloom and new growth were noted at the close of the month.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

February is normally one of the stormiest months of the year over the North Atlantic, and while during the current month the number of days with gales was not far from the normal over the greater part of the ocean, a large number of casualties was reported, not only at sea but also on the European coast.

During the first two decades of the month both the North Atlantic high and Icelandic low were, for the most part, unusually well developed, while the last decade was characterized by sudden changes of pressure in the vicinity of the Azores and anticyclonic conditions over northern Europe.

One unusual feature was the comparatively high force of the northeast trades during both the first and last periods of the month, which will be referred to later.

The number of days with fog was apparently considerably below normal over the entire ocean, except along the American coast between Hatteras and Nantucket and also in the Gulf of Mexico, being reported on five days in both these localities.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, February, 1928

	Average pres- sure	Depart- ure ¹	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Belle Isle, Newfoundland.....	29.68	-0.07	30.42	23d.....	29.18	25th. ²
Halifax, Nova Scotia.....	30.01	+0.08	30.62	22d.....	29.44	19th.
Nantucket.....	30.06	0.00	30.66	3d.....	29.36	18th.
Hatteras.....	30.15	+0.02	30.52	22d.....	29.48	18th.
Key West.....	30.10	+0.02	30.32	19th.....	29.96	16th.
New Orleans.....	30.17	+0.07	30.50	19th.....	29.86	13th. ²
Cape Gracias, Honduras.....	29.95	-0.02	30.02	19th. ² ...	29.88	23d.
Turks Island.....	30.16	+0.08	30.22	20th. ² ...	30.10	1st. ²
Bermuda.....	30.21	+0.07	30.52	22d.....	29.80	29th.
Horta, Azores.....	30.13	+0.12	30.60	3d.....	29.68	27th.
Lerwick, Shetland Islands.....	29.65	-0.07	30.54	23d.....	28.64	1st.
Valencia, Ireland.....	29.99	+0.09	30.59	22d.....	29.48	10th. ²
London.....	30.10	+0.10	30.57	20th.....	29.26	11th.

¹ From normals shown on H. O. Pilot Chart, based on observations at Greenwich mean noon or 7 a. m. 75th meridian.

² And on other dates.

On the 1st and 2d a low was central off the north coast of Scotland and moderate to strong northerly to

westerly gales prevailed between the 30th meridian and the European coast. From the 3d to the 5th the greater part of the steamer lanes was storm swept, and on the latter date Belle Isle was also near the center of a violent disturbance of limited extent.

From the 5th to 9th the northeast trades were unusually strong, as shown by the report from the Danish M. S. *California*, in table of gales and storms.

From the 6th to 9th westerly gales still prevailed over the middle and eastern sections of the ocean and on the 8th and 9th a fairly well developed cyclonic disturbance was central near 30° N., 45° W., with strong gales near the center. This disturbance moved slowly eastward, and on the 11th a southeast gale was encountered near 25° N., 43° W., as shown by report in table from the Dutch S. S. *Hector*.

On the 11th and 12th winds of hurricane force swept over the northern steamer lanes between the 30th meridian and European coast and considerable damage to shipping was reported, as well as on shore.

On the 13th and 14th a severe disturbance was over the area between the 30th and 50th parallels and the 30th and 65th meridians that reached its greatest intensity on the latter date. On the 15th land stations on the British Isles reported southwest winds of force 7 to 9.

Charts VIII to XI cover the period from the 17th to 20th, inclusive.

On the 22d and 23d a disturbance was over the middle sections of the steamer lanes that by the 24th had increased both in extent and intensity, as on that date it covered the greater part of the region between the Azores and the 50th meridian.

From the 23d to 28th the northeast trades, for the second time during the month, were unusually strong, as shown by report in table from the American S. S. *Atlantic*.

On the 25th and 26th a depression was central near the Azores that moved slowly northeastward and by the end of the month was over the British Isles.

On the 27th gales were reported by a number of vessels in mid-ocean; the storm area increased in extent and by the 28th extended from the 10th to the 40th meridians.

On the 29th a well-developed low of limited extent was central about 250 miles east of Bermuda, as shown by report from the American S. S. *Western Ally*.